Inhibin is more specific than calretinin as an immunohistochemical marker for differentiating sarcomatoid granulosa cell tumour of the ovary from other spindle cell neoplasms.

AUTHOR: Shah V I (Reprint); Freites O N; Maxwell P; McCluggage W G
AUTHOR ADDRESS: Department of Histopathology, Singleton Hospital, Sketty, Swansea, SA2 8QA, UK**UK
AUTHOR E-MAIL ADDRESS: varsha.shah@swansea-tr.wales.nhs.uk
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ABSTRACT: Aims: To describe a case of recurrent sarcomatoid adult granulosa cell tumour (AGCT) of the ovary and to evaluate the usefulness of two ovarian sex cord stromal markers (inhibin and calretinin) in separating sarcomatoid AGCT from true sarcomas. Methods: A 72 year old woman presented with a recurrent sarcomatoid AGCT in the sigmoid colon mesentery, which histologically mimicked a malignant ***gastrointestinal*** stromal tumour (GIST). This index case and 79 sarcomas (32 GISTs, 28 leiomyosarcomas, 15 endometrial stromal sarcomas (ESSs), including one with sex cord-like areas, and four undifferentiated uterine sarcomas) were immunostained using antibodies to inhibin and calretinin. Results: The recurrent sarcomatoid AGCT expressed diffuse, strong cytoplasmic immunoreactivity with inhibin and focal but strong nuclear and cytoplasmic positivity with calretinin. Focal, weak cytoplasmic inhibin expression limited to sex cord-like areas was present in one ESS. None of the other sarcomas expressed ***inhibin*** . Focal, strong calretinin immunoreactivity was identified in 11 leiomyosarcomas and one GIST. The case of ESS with sex cord-like areas showed strong immunoreactivity for calretinin limited to the sex cord-like areas. Conclusions: ***Inhibin*** is a useful immunomarker to distinguish sarcomatoid AGCT from other spindle cell neoplasms that may enter into the differential diagnosis. Calretinin appears to be less specific than ***inhibin*** .

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? ds

Set     Items   Description
S1      17418   INHIBIN
S2     847892   INTRACELLULAR OR CYTOPLASM
S3        582   S1 AND S2
S4      14830   ACTIVIN
S5        231   S3 AND S4
S6        159   RD  (unique items)
S7     761320   COLON OR COLORECTAL OR GASTROINTESTIN?
S8          2   S6 AND S7
? s s3 and s7
             582  S3
          761320  S7
      S9      14  S3 AND S7
? rd
     S10      12  RD  (unique items)
? t s10/3,k,ab/1-12

 10/3,K,AB/1     (Item 1 from file: 155)
DIALOG(R)File 155:MEDLINE(R)
(c) format only 2008 Dialog. All rts. reserv.

15975754   PMID: 16487364
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Activin-A as an intraovarian modulator: actions, localization, and regulation of the intact dimer in human ovarian cells.
Rabinovici J; Spencer S J; Doldi N; Goldsmith P C; Schwall R; Jaffe R B
Department of Obstetrics, Gynecology and Reproductive Sciences, University of California, San Francisco 94143.
Journal of clinical investigation (UNITED STATES) May 1992, 89 (5) p1528-36, ISSN 0021-9738--Print Journal Code: 7802877
Contract/Grant No.: HD-11979; HD; NICHD; HD-18726; HD; NICHD; TW04258-01; TW; FIC; +
Publishing Model Print
Document type: In Vitro; Journal Article; Research Support, U.S. Gov't, P.H.S.
Languages: ENGLISH
Main Citation Owner: NLM
Record type: MEDLINE; Completed

The actions, localization, and regulation of activin in the human ovary are unknown. Therefore, the aims of this study were (a) to define the effects of recombinant activin-A and its structural homologue, inhibin-A, on mitogenesis and steroidogenesis (progesterone secretion and aromatase activity) in human preovulatory follicular cells; (b) to localize the activin-A dimer in the human ovary by immunohistochemistry; and (c) to examine regulation of intracellular activin-A production in cultured human follicular cells. In addition to stimulating mitogenic activity, activin-A causes a dose- and time-dependent inhibition of basal and gonadotropin-stimulated progesterone secretion and aromatase activity in human luteinizing follicular cells on day 2 and day 4 of culture. Inhibin-A exerts no effects on mitogenesis, basal or gonadotropin-stimulated progesterone secretion and aromatase activity, and does not alter effects observed with activin-A alone. Immunostaining for dimeric activin-A occurs in granulosa and cumulus cells of human ovarian follicles and in granulosa-lutein cells of the human corpus luteum. cAMP, and to a lesser degree human chorionic gonadotropin and follicle-stimulating hormone, but not inhibin-A, activin-A, or phorbol 12-myristate 13-acetate, increased the immunostaining for activin-A in cultured granulosa cells. These results indicate that activin-A may function as an autocrine or paracrine regulator of follicular function in the human ovary.

...activin-A dimer in the human ovary by immunohistochemistry; and (c) to examine regulation of intracellular activin-A production in cultured human follicular cells. In addition to stimulating mitogenic activity, activin-A causes...

2/3,K,AB/12 (Item 12 from file: 155)
DIALOG(R)File 155:MEDLINE(R)


08158075 PMID: 2546739
Stimulation of glucose production by activin-A in isolated rat hepatocytes.
Mine T; Kojima I; Ogata E
Fourth Department of Internal Medicine, University of Tokyo School of Medicine, Japan.
Endocrinology (UNITED STATES) Aug 1989, 125 (2) p586-91, ISSN 0013-7227--Print Journal Code: 0375040
Publishing Model Print
Document type: Journal Article; Research Support, Non-U.S. Gov't
Languages: ENGLISH
Main Citation Owner: NLM
Record type: MEDLINE; Completed

The effect of activin-A on glycogenolysis was studied in isolated rat hepatocytes. Activin-A stimulated glucose output in hepatocytes in a dose-dependent manner. The maximal effect of the glycogenolytic action of

activin-A, which was about 50% of the glucagon action, was obtained at 10(-9) M. When 10(-9) M activin-A and 5 x 10(-9) M glucagon were added simultaneously, the actions of these two agents were additive. In contrast, there was no additivity when 10(-9) M activin-A and 10(-8) M angiotensin-II were added. Activin-A did not increase cAMP at any doses tested, but induced a rapid increase in cytoplasmic free calcium concentration. Activin-A increased the cytoplasmic free calcium concentration even in the presence of 1 microM extracellular calcium, suggesting that activin-
***A*** caused calcium release from an ***intracellular*** calcium pool(s). The internal calcium pool affected by activin-A appeared to be the same as that affected by either angiotensin-II or vasopressin. When [3H] inositol-labeled hepatocytes were incubated with activin-A, radioactivity in the inositol trisphosphate fraction was rapidly increased. These results indicate that activin-A acts on rat hepatocytes and stimulates glycogenolysis by activating the calcium messenger s

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Transforming growth factor-beta 1 and activin A generate anti proliferative signaling in thyroid cancer cells
AUTHOR: Matsuo Silvia Emiko; Leoni Suzana Garcia; Colquhoun Alison; Kimura Edna Teruko (Reprint)
AUTHOR ADDRESS: Univ Sao Paulo, Dept Cell and Dev Biol, Inst Biomed Sci, Av Prof Lineu Prestes 1524, BR-05508000 Sao Paulo, Brazil**Brazil
AUTHOR E-MAIL ADDRESS: etkimura@usp.br
JOURNAL: Journal of Endocrinology 190 (1): p141-150 JUL 2006 2006
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ABSTRACT: Transforming growth factor-beta 1 (TGF-beta 1) and activin A (ActA) induce similar intracellular signaling mediated by the mothers against decapentaplegic homolog (SMAD) proteins. TGF-beta 1 is a potent antimitogenic factor for thyroid follicular cells, while the role of ActA is not clear. In our study, the proliferation of TPC-1, the papillary thyroid carcinoma cell line, was reduced by both recombinant ActA and TGF-beta 1. Due to the concomitant expression of TGF-beta 1 and ActA in thyroid tumors, we investigated the effects of either TGF-beta 1 or ActA gene silencing by RNA interference in TPC-1 cells in order to distinguish the specific participation of each in proliferation and ***intracellular*** signaling. An increased proliferation and reduced SMAD2, SMAD3, and SMAD4 mRNA expression were observed in both TGF-beta 1 and ActA knockdown cells. Recombinant TGF-beta 1 and ActA increased the expression of inhibitory SMAD7, whereas they reduced c-MYC. Accordingly, we detected a reduction in SMAD7 expression in knockdown cells while, unexpectedly, c-MYC was reduced. Our data indicate that both TGF-beta 1 and ActA generate SMADs signaling with each regulating the expression of their target genes, SMAD7 and c-MYC. Furthermore, TGF-beta 1 and ActA have an antiproliterative effect on thyroid papillary carcinoma cell, exerting an important role in the control of thyroid tumorigenesis.

Transforming growth factor-beta 1 and activin A generate anti proliferative signaling in thyroid cancer cells

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Set     Items   Description
S1         34   (ACTIVIN(W)A)(5N) INTRACELLULAR
S2         19   RD  (unique items)
? s activin(w)a
Processing
Processing
Processing
           15150  ACTIVIN
        33388682  A
      S3    4835  ACTIVIN(W)A
? s intracellular
      S4  675066  INTRACELLULAR
? s s3 and s4
            4835  S3
          675066  S4
      S5     225  S3 AND S4
? s colon
      S6  287992  COLON
? s s5 and s6
             225  S5
          287992  S6
      S7       0  S5 AND S6
? s cancer
      S8 1895473  CANCER
? s s5 and s8
             225  S5
         1895473  S8
      S9      21  S5 AND S8
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12039902 Genuine Article#: 723JP Number of References: 38
Title: Activin beta(C)-subunit heterodimers provide a new mechanism of regulating activin levels in the prostate (ABSTRACT AVAILABLE)
Author(s): Mellor SL; Ball EMA; O'Connor AE; Ethier JF; Cranfield M; Schmitt JF; Phillips DJ; Groome NP; Risbridger GP (REPRINT)
Corporate Source: Monash Univ,Monash Med Ctr, Monash Inst Reprod & Dev, Ctr Urol Res,246 Clayton Rd/Clayton/Vic 3168/Australia/ (REPRINT); Monash Univ,Monash Med Ctr, Monash Inst Reprod & Dev, Ctr Urol Res,Clayton/Vic 3168/Australia/; Prince Henrys Inst Med Res,Clayton/Vic 3168/Australia/; Oxford Brookes Univ,Sch Biol & Mol Sci,Oxford OX3 0BP//England/
Journal: ENDOCRINOLOGY, 2003, V144, N10 (OCT 1), P4410-4419
ISSN: 0013-7227 Publication date: 20031001
Publisher: ENDOCRINE SOC, 4350 EAST WEST HIGHWAY SUITE 500, BETHESDA, MD 20814-4110 USA
Language: English Document Type: ARTICLE
Abstract: Activins are formed by dimerization of beta-subunits and, as members of the TGF-beta superfamily, have diverse roles as potent growth and differentiation factors. As the biological function of the activin C homodimer (beta(C)-beta(C)) is unknown, we sought to compare activin A (beta(A)-beta(A)), B (beta(B)-beta(B)), and C homodimer bioactivities and to investigate the consequences of activin beta(C)-subunit overexpression in prostate tumor cells. Exogenous activin A and B homodimers inhibited cell growth and activated activin-responsive promoters. In contrast, the activin C homodimer was unable to elicit these responses. We previously showed that the activin beta(C)-subunit heterodimerized with activin beta(A) in vitro to form activin AC. Therefore, we hypothesize that the activin beta(C)-subunit regulates the levels of bioactive activin A by the formation of activin AC heterodimers. To test this hypothesis, we measured activin AC heterodimer production using a novel specific two-site ELISA that we developed for this purpose. In the PC3 human prostate tumor cell line, activin beta(C)-subunit overexpression increased activin AC heterodimer levels, concomitantly reduced activin A levels, and decreased activin signaling. Overall, these data are consistent with a role for the activin beta(C)-subunit as a regulatory mechanism to reduce activin A secretion via intracellular heterodimerization.